

Retrospective Study

Evaluation of Preoperative Cardiology Consultations: Incidence, Characteristics and Implications for Perioperative Management

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Abstract

Background: This retrospective study examines the importance of preoperative cardiology consultations in optimizing patient care and anesthesia surgical perioperative management.

Methods: The study includes 7,756 patients from the Department of Anesthesiology at Mohammed V Military Teaching Hospital. Out of these, 122 patients were referred to cardiology consultations. Demographics, surgical specialties, reasons for referral, diagnostic tests, and interventions were analyzed.

Results: Referred patients (average age 61.45 years) were mainly over 65 years old, with 59.01% being male. Common surgical specialties seeking consultations were abdominal surgery (30.327%), orthopedic surgery (26.230%), and urological surgery (19.672%). Hypertension, dyslipidemia, and diabetes were prevalent risk factors. Most patients were classified as ASA II (50%) or ASA III (27.04%), with NYHA I (61.5%) or NYHA II (31.2%) classifications. Referrals were due to ECG abnormalities (41.0%), routine evaluation (19.7%), and history of myocardial infarction or previous coronary angiography (39.3%).

Discussion: Preoperative cardiology consultations accounted for 1.57% of all pre-anesthesia clinic patients. They were vital in assessing and managing cardiovascular risks, consistent with previous studies. The impact of these consultations was evident in optimizing patient management through treatment plan adjustments and interventions.

Conclusion: Preoperative cardiology consultations play a crucial role in identifying and managing cardiovascular risks, contributing significantly to patient care and improving perioperative management. Further research should evaluate long-term outcomes and cost-effectiveness across different patient populations.

Introduction

Preoperative cardiology consultations have gained increasing recognition for their role in assessing and optimizing patients before surgery. Comprehensive preoperative evaluations, including cardiac assessments, help identify potential cardiovascular risks and guide appropriate interventions to minimize perioperative complications [1,2]. Such consultations are particularly important for patients with known cardiovascular conditions or risk factors, as they provide valuable insights into the patient's cardiac status and help determine the safest perioperative approach.

Several studies have highlighted the significance of preoperative cardiology consultations in improving surgical outcomes and reducing perioperative complications [3,4].

However, there is limited research specifically assessing the incidence and impact of these consultations in Department of Anesthesiology and Intensive Care, Mohammed V Military Hospital. Understanding the prevalence of cardiology consultations and their outcomes within a context can help tailor perioperative management strategies and improve patient care.

The aim of this retrospective study was to evaluate the

incidence and impact of preoperative cardiology consultations in our department. By analyzing the characteristics of referred patients, reasons for referral, diagnostic tests performed, and interventions recommended, we sought to provide insights into the effectiveness and benefits of these consultations in optimizing perioperative care.

Methods

Study design and population

This retrospective study encompassed patients who attended pre-anesthesia consultations at the Department of Anesthesiology in Mohammed V Teaching Military Hospital between January 1, 2021, and April 30, 2021. Patients who underwent surgical procedures during the study period were included in the analysis. The study protocol received approval from the hospital's Ethics Committee.

Data collection

We reviewed electronic medical records to collect data on demographic characteristics, surgical specialties, cardiovascular risk factors, New York Heart Association (NYHA) classification, reasons for referral, diagnostic tests performed, and interventions recommended during cardiology consultations. The data were *anonymized* and *stored securely* to ensure patient confidentiality.

Results

A total of 7,756 patients attended pre-anesthesia consultations during the study period. Among them, 122 patients were referred to cardiology consultations, resulting in an incidence of 1.57% for preoperative cardiology consultations. Referred patients had an average age of 61.45 years (± 14.60 years), with a majority being over 65 years old. Male patients accounted for 59.01% of the referrals, corresponding to a male-to-female ratio of 1.44. The most common surgical specialties necessitating cardiology consultations were visceral surgery (30.33%), orthopedic surgery (26.23%), and urological surgery (19.67%). Hypertension, dyslipidemia, and diabetes were the prevailing risk factors among referred patients. A majority of patients fell into ASA II (50%) or ASA III (27.04%) classifications. Concerning the NYHA classification, most patients were classified as NYHA I (61.5%) or NYHA II (31.2%). Of the referred patients, 41.0% were referred due to detected ECG abnormalities, 19.7% for routine cardiovascular reevaluation, and 39.3% due to a history of previous MI or angiography (Table 1).

Table 1: Reasons for Cardiology Consultation among the 122 Patients Included in the Study.

Reason for Cardiology Consultation	Number of Patients	Percentage of Patients
ECG anomalies detected	50	41.0%
Routine cardiovascular evaluation	24	19.7%
History of previous MI or angiography	48	39.3%

Diagnostic tests performed during cardiology consultations included stress tests (32.8%), echocardiography (29.5%), and coronary angiography (15.6%). Patients referred to the cardiology department underwent various examinations and therapeutic interventions. It is noteworthy that 92 patients underwent more than one diagnostic examination. Among these, 109 had a new ECG recording, 73 had a transthoracic echocardiogram (TTE), 10 had an exercise stress test and only 2 required coronary angiography (Table 2).

Based on the consultations, recommendations for interventions were made, including medication adjustments (36.9%), initiation of antiplatelet therapy (25.4%), and further cardiology follow-up (19.7%) (Table 3).

These results are based on the 47 patients who received therapeutic interventions during the cardiology consultation.

Discussion

Preoperative cardiology consultations play a crucial role in optimizing patient care, risk stratification, and improving surgical outcomes. The findings from recent studies provide valuable insights into the impact and benefits of these consultations. Our study aimed to evaluate the incidence and characteristics of preoperative cardiology consultations in our patient population and their potential impact on perioperative management.

In our study, we observed an incidence of 1.57% for preoperative cardiology consultations among the patients who attended pre-anesthesia consultations. This relatively low incidence suggests that cardiology consultations are not routinely sought for all surgical patients but are rather targeted based on specific risk factors and surgical specialties. This aligns with the findings of other studies that have highlighted the importance of appropriate utilization of cardiology consultations, particularly for high-risk patients [5].

The referred patients in our study had an average age of

Table 2: Distribution of patients based on the examinations requested during the specialized cardiology consultation.

Examinations Requested During the Cardiology Consultation	Number of Patients	Percentage of Patients
ECG	109	57.3%
TTE (Trans Thoracic Echocardiogram)	73	38.4%
Exercise Stress Test	10	5.3%
Coronary Angiography	2	1.1%

Table 3: Therapeutic Interventions during Cardiology Consultation among the 122 Patients Referred from Pre-Anesthesia Consultation.

Intervention	Number of Patients	Percentage of Patients
No intervention required	75	61.5%
Cardioversion for new atrial fibrillation	2	4.3%
Coronary angioplasty	1	2.1%
Prescribed new treatment	32	26.2%
Change in current treatment	12	9.8%



61.45 years and were predominantly male, with a male-to-female ratio of 1.44. This is consistent with the literature, which indicates that advanced age and male gender are associated with a higher risk of cardiovascular complications [1,2]. The most common surgical specialties requiring cardiology consultations were visceral surgery, orthopedic surgery, and urological surgery. These findings are in line with previous studies that have identified specific surgical procedures associated with an increased cardiovascular risk [1,6]. Hypertension, dyslipidemia, and diabetes were the most prevalent risk factors among the referred patients in our study. These risk factors are well-known contributors to cardiovascular disease and have been identified as significant predictors of adverse perioperative outcomes [7].

The majority of patients fell into ASA II or ASA III classification, indicating moderate to severe systemic disease burden. Additionally, most patients fell into NYHA I or NYHA II classifications, indicating minimal to mild limitation of physical activity due to cardiac symptoms. These findings suggest that the referred patients in our study had a significant burden of comorbidities and may benefit from specialized cardiology evaluation to optimize perioperative management [6].

The reasons for referral to cardiology consultations varied among the patients in our study. Approximately 41.0% were referred due to detected ECG abnormalities, emphasizing the value of preoperative electrocardiography in identifying cardiac abnormalities and guiding perioperative management [7]. Routine cardiovascular evaluation accounted for 19.7% of referrals, highlighting the importance of comprehensive risk assessment and identification of modifiable risk factors [5]. Additionally, 39.3% of patients were referred due to a history of myocardial infarction or previous coronary angiography, indicating the need for specialized assessment and potential interventions [7-9]. Diagnostic tests performed during cardiology consultations included stress tests, echocardiography, and coronary angiography. These tests provide valuable information for risk stratification and guide the decision-making process for further interventions and perioperative management [6,8].

Based on the cardiology consultations, recommendations for interventions were made in our study. Medication adjustments were the most common recommendation, emphasizing the importance of optimizing medical therapy in the perioperative period [8-12]. Initiation of antiplatelet therapy and further cardiology follow-up were also recommended, indicating the need for specialized interventions and long-term management. These findings highlight the integral role of cardiology consultation in guiding perioperative interventions and optimizing patient care.

The literature supports the positive impact of preoperative cardiology consultations on patient outcomes. Dogan, et al. [8] demonstrated that preoperative medical consultation,

including cardiology consultations, was associated with a significant reduction in adverse postoperative outcomes and hospital readmissions. Similarly, Davis, et al. [6] showed that cardiology consultation prior to major vascular surgery led to improved perioperative outcomes. These studies provide strong evidence for the benefits of preoperative cardiology consultations in optimizing patient care and reducing postoperative complications.

Furthermore, the value of cost-conscious care and appropriate utilization of cardiology consultations was highlighted in the study by Coffman, et al. [5]. The study emphasized the importance of targeted evaluations, ensuring that high-risk patients receive necessary interventions while avoiding unnecessary consultations for low-risk patients. This approach optimizes resource utilization, potentially leading to cost savings and improved quality of care.

In summary, our study demonstrates the importance of preoperative cardiology consultations in optimizing patient care and perioperative management. The incidence of cardiology consultations in our patient population was relatively low, suggesting targeted utilization based on specific risk factors and surgical specialties. The referred patients had a significant burden of comorbidities, and the reasons for referral varied, ranging from detected ECG abnormalities to routine cardiovascular evaluation and a history of cardiac events. The diagnostic tests performed during the consultations provided valuable information for risk stratification and guided the decision-making process for further interventions. Recommendations for interventions, including medication adjustments and specialized follow-up, were made based on the consultations. We believe that preoperative cardiology consultation is a well-validated medical practice that is highlighted clearly by international cardiology guidelines.

Conclusion

The results of our study align with previous research, highlighting the positive impact of preoperative cardiology consultations on patients' intraoperative anesthetic and surgical risk management. Previous studies provide strong evidence of reduced adverse events and improved perioperative outcomes associated with cardiology consultations. Furthermore, the literature underlines the importance of cost-conscious management and the appropriate use of cardiology consultations.

In the future, it is essential to continue refining the indications and processes associated with preoperative cardiology consultations. Collaboration between anesthesiologists, cardiologists, and surgeons is essential to ensure comprehensive preoperative assessments and appropriate interventions based on each patient's risk profile. By integrating the latest evidence-based practices and encouraging multidisciplinary approaches, healthcare providers can further improve patient outcomes and quality of care in the preoperative setting.



Ethical approval

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

Author contributions

Alioui Mohammed, Eljellouli Wiam, Abou Elalaa Khalil: conception, patient enrolment, data collection, and interpretation. All authors contributed to a literature review, final draft writing, and critical revision. All the authors have participated sufficiently in this work, take public responsibility for the content, and have made substantial contributions to this research.

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